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OPTIMAL BINARIZATION OF GRAY-SCALED DIGITAL  
IMAGES VIA FUZZY REASONING

CROSS REFERENCE TO RELATED APPLICATIONS

U/s  
10/9

5 [0001] This application is related to an application entitled Image Edge Extraction  
Via Fuzzy Reasoning, which is commonly owned with the subject application and is to  
be filed under Docket Number KSC-12278.

10/783551

ORIGIN OF THE INVENTION

10 [0002] The invention described herein was made in the performance of work  
under a NASA contract and is subject to the provisions of Public Law 96-517 (35 U.S.C.  
§202) in which the contractor has elected not to retain title.

BACKGROUND OF THE INVENTION

1. Field of the Invention

15 [0003] The present invention relates in general to a method and system for  
converting gray scale images to binary images which employs fuzzy reasoning to  
calculate an optimal binarization threshold value.

2. Description of the Background Art

20 [0004] Conversion of gray-scale digital images to binary images is of special  
interest because an image in binary format can be processed with very fast logical  
(Boolean) operators by assigning a binary value to each of the image's pixels. A binary  
one value indicates that the pixel belongs to the image foreground, which may represent  
an object in the image, while a binary zero value indicates that the pixel is darker and  
belongs to the image's background. Since most image display systems and software  
employ gray-scale images of 8 or more bits per pixel, the binarization of these images